Original Paper

Palmatine hydrochloride improves motor dysfunction in streptozotocin-induced diabetic rats

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Abstract

Background and Objective: Diabetes induces motor dysfunctions, Palmatine is an isoquinoline alkaloid, with anti-diabetic and antioxidant activities. This study was conducted to evaluate the effect of Palmatine on motor dysfunction in STZ-induced diabetic rats.

Materials and Methods: In this experimental study, 32 male wistar rats were randomly allocated into control, Palmatine-treated non-diabetic, diabetic and Palmatine-treated diabetic groups. Diabetes was induced by STZ administration at the dose of 55 mg/kg/bw, intraperitoneally. Palmatine hydrochloride was administered subcutaneous at doses of 10 mg/kg/bw per day for a period of 6 weeks, one week after induction of diabetes. Blood glucose level was measured 1, 3, 5, 7 weeks after STZ injection. Locomotor activity tests including Y maze, grip-traction and inclined plane tests were performed to determining locomotor activity.

Results: In Y maze test, the number of arms entered significantly increased in Palmatine-treated diabetic group compared to diabetic group ($P<0.05$). Grip traction and inclined plane tests significantly increased in Palmatine-treated diabetic group compared to diabetics animals ($P<0.05$).

Conclusion: Palmatine hydrochloride administration for 6 weeks improves motor dysfunctions in streptozotocin-induced diabetic rats.

Keywords: Diabetes mellitus, Palmatine hydrochloride, Motor dysfunctions, Streptozotocin, Rat

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